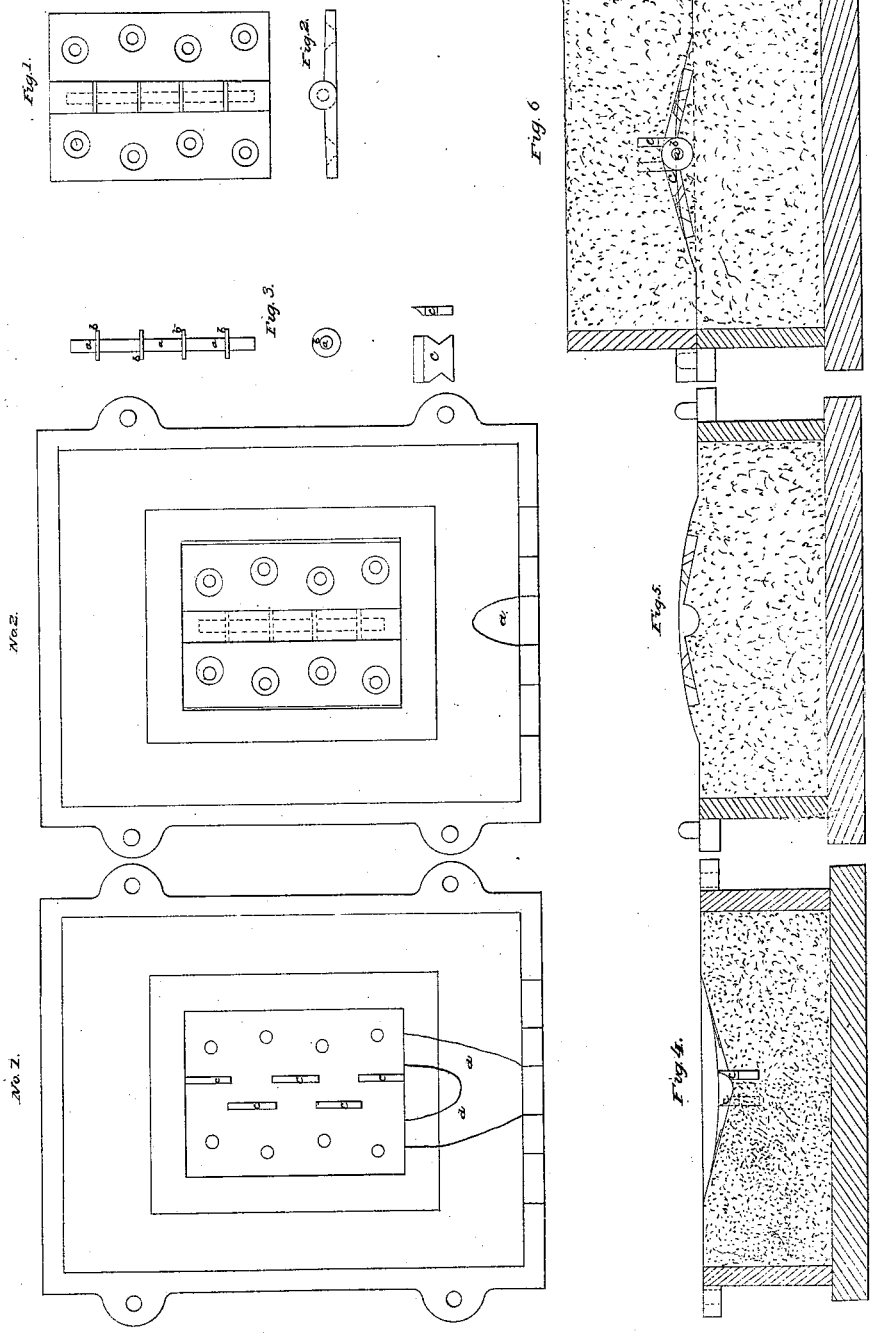
S. Wilkes

Casting Hinges.

No 2,043. Patented Apr. 10, 1841.



UNITED STATES PATENT OFFICE.

SAMUEL WILKES, OF DARLESTON, ENGLAND.

IMPROVEMENT IN THE MANNER OF CASTING HINGES ONTO THEIR AXES.

Specification forming part of Letters Patent No. **2,043**, dated April 10, 1841; antedated January 21, 1840.

To all whom it may concern:

Be it known that I, SAMUEL WILKES, a subject of the Queen of Great Britain, and now residing at Darleston, in the county of Stafford, within the said Kingdom, iron-founder, have invented or discovered certain new and useful Improvements in the Manufacture of Hinges; and I, the said SAMUEL WILKES, do hereby declare that the nature of my said invention and the manner in which the same is to be performed are fully described and ascertained in and by the following statement thereof, reference being had to the drawings hereunto annexed, and to the figures and letters marked thereon—that is to say:

My invention relates to a mode of manufacturing hinges by casting the two sides or flaps and hinge-joint thereto at one time onto a suitable axis; and in order to give the best information in my power, I will proceed to describe the drawings hereunto annexed.

In the drawings, Figure 1 shows a plan or front view of a hinge constructed according to my invention. Fig. 2 is an edge view of Fig. 1, and Fig. 3 is an axis having thereon certain washers or plates which keep the parts of the hinge-joint separate and prevent the melted metal running solid.

The washers, as shown in the drawings, are thin disks of iron or other metal, and when the hinge is cast these washers remain as parts of the hinges; but this is not absolutely necessary, as the disks may be of hard paper or other suitable material, which, being varnished and dusted over, will act during the time of casting to prevent the melted metal of the two flaps or sides running together at the hinge-joint, the parts of which will thus be kept separate; but I consider it better to use metal disks for the purpose, as shown in Fig. 1. The disks *b* are perforated in the center, and slide tightly onto the axis *a*, and when set on the axis to a proper gage or distance apart will remain sufficiently secure. The axis and disks thereon are varnished and dusted over with fine burned clay, and are then in a proper state to be put into the mold to receive the melted metal of which the hinge is to be made, which is to be run thereon in order to produce the two flaps or sides and the hinge-joints thereto.

Having thus described the nature of the hinge produced according to my invention by casting the two flaps or sides at one time onto a suitable axis, I will now proceed to explain how I form the molds for casting the same.

I take a frame such as is commonly used by molders and fill it with sand, and, having properly pressed the sand therein, I turn the frame over in order to use the even and smooth face of the sand in the frame, and then proceed to place one or more pattern-hinges on the surface, according to the size of the mold. I have, however, for convenience of description, shown only a small mold in the drawings suitable for casting one hinge at a time; but it will be evident to workmen engaged as molders that several hinges may be cast in the same mold when the mold is sufficiently large. Having pressed the front surface of the hinge into the frame of sand, I place iron filling-pieces, or what may be called "chills," *c* into each of the open joints of the pattern-hinge, which is pressed into the surface of sand in the frame, as above stated. I then place an empty frame onto the first, above explained, and fill in sand and properly press it down in order to produce a proper half-mold, as is well understood by molders; and having filled the upper frame, I place a board thereon and turn the two frames over and then remove the first frame of sand from the lower frame of sand, which will leave the hinge in the second frame of sand with the front of the hinge upward. I then place an empty frame onto the second frame, and fill it in with sand, in order to take an impression from the half-mold which has the pattern-hinge therein, and, having filled and properly pressed in the sand, as is well understood by molders, I remove the last frame of sand, by which a half-mold, No. 2, is produced ready for use. I then again place the first or what is technically called the "odd side mold," onto the one containing the pattern-hinge, and place a board on the upper surface and turn the two frames over and remove the upper frame, and thus is produced the half-mold No. 1 ready for use, having the filling-pieces or chills projecting in their proper places for producing the hollow joints *a*, as is shown in the half-mold No. 1 of the drawings. I would, however, remark that in such cases where the open joints are large, and will allow of there being sufficient sand to hold together

for forming such filling-pieces, I do not then use the iron filling-pieces *e;* and it will be evident that when the open joints are less the filling-pieces will be thinner.

Fig. 4 shows a section of the half-mold No. 1. Fig. 5 shows a section of the half-mold No. 2, and Fig. 6 shows a section of the two half-molds No. 1 and No. 2 combined for casting therein.

d d, No. 1 and No. 2, show the ducts, or what are sometimes by molders called "ridges," by which the melted metal of which the hinge is to be cast is to be run into the mold, the mold being placed in a slanting direction.

Having thus described the nature of my invention and the manner of performing the same, I would have it understood that what I claim is—

The mode of manufacturing hinges by casting the two flaps or sides with their hinge-joints at one time onto a suitable axis, as above described.

SAMUEL WILKES.

Witnesses:

JOHN GIBBS,

J. D. GOODMAN,

Both accountants, Birmingham.